REMARKS

Claim 2-4, 44-47 and 61, 64, 65 and 67, as amended, remain herein. Claims 10 and 12-43, 54-60 and 70 and 71 remain herein but are presently withdrawn from consideration.

Minor, editorial changes have been made in claim 2.

Claims 3 and 4 have been reworded to recite better the mask areas in terms of a stage structure. See applicants' specification at page 35, beginning at line 6.

Claims 45, 61, 64 and 67 have been amended to recite the lower gate electrode made of a low-resistance electrode having an electric specification resistance of up to 5 Ω•cm and an upper gate electrode made of a high-masking electrode having a density of at least 8 or a hydrogen adsorptive metal, and having a high masking ability of hydrogen ions injected during injection of impurities. See claim 50, as originally filed.

Claims 48-53, 62, 63, 66, 68 and 69 have been cancelled without prejudice or disclaimer.

1. The finality of the restriction requirement is acknowledged.

2. Objections were stated to the drawings. Submitted herewith are duplicate copies of Figures 1 and 2 revised to include the Prior Art legend originally submitted with the Preliminary Amendment filed June 30, 2003. Withdrawal of the objection to the drawings is respectfully requested.

3. Claims 2-4, 44-53 and 61-69 were rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-9 of U.S. Patent 6,624,473.

The presently claimed invention is stated in claims 2-4, which recite the gate electrode layer comprising a silicide layer, because silicide is appropriate for refinement processing and reduces the resistance of the gate electrode. In contrast, the '473 patent does not claim the gate electrode layer comprising materials other than aluminum.

The gate electrode of present claim 2 is a gate electrode serving also as an LDD forming mask that comprises two silicide films comprising upper and lower silicide thin films each having a different silicide-composing metal, wherein one of the silicide thin films covers the other silicide thin film and is formed in slight protrusion on at least the source

electrode side and the drain electrode side of the other silicide thin film.

By making the lower layer silicide, it is possible to reduce the resistance of the gate electrode. Additionally, by making the upper layer silicide with a different metal than that of the lower layer, the silicide used can have greater heat conductivity than that of the lower layer. Accordingly, in the presently claimed invention, heat radiation properties are excellent when the element generates heat. As a result, the presently claimed gate electrode efficiently radiates heat generated in relation to the degree of refinement of the pixel elements.

The gate electrode of present claim 3 comprises structure wherein the center portion of the gate electrode has a structure of highest layer number, and the number of the layers decreases toward the periphery of the gate electrode, making it possible to readily obtain an LDD having a multi-stage structure. In addition, by reacting metal and silicon, it is possible to form silicide whose metal has the same metal element as the reacting metal, thereby readily making a multi-

stage structure. Such is not the case in the '473 claims, which recite the gate material being only aluminum.

The gate electrode of present claim 4 comprises structure wherein the aluminum film that is vulnerable to heat is sandwiched between the high-melting-point metal thin film layer and the silicide thin film layer, which is stable at high temperature. This eliminates occurrence of deformations or hillocks when the temperature is raised to near the melting point of aluminum. Even if deformations and hillocks occur, since a conductor layer is present above and below such portion, it is possible to alleviate the effect the portion ahs on the electrical resistance of the entire gate electrode.

In present claims 44-47, 64, 65 and 67, the upper gate electrode comprises a high-density metal material having a density of at least 8 or a hydrogen adsorptive metal, which makes it possible to prevent the penetration by hydrogen. Thus, the presently claimed semiconductor element prevents the intrusion of hydrogen, thereby keeping a threshold voltage from increasing, and providing a reliable TFT. Additionally, by forming the lower gate electrode of a low-resistance metal, it is possible to obtain a gate electrode having a low

resistance. These advantageous effects are not claimed in '473.

U.S. Patent 6,624,473 claims a gate electrode having a two-stage structure. The lower layer is aluminum and the upper layer includes an anodized oxide film (Fig. 2D). The lower layer is located directly on a silicon oxide film. For that purpose, scandium is contained in the aluminum layer, thus eliminating the occurrence of deformations or hillocks. However, '473 does not claim any conductive layer in the upper and lower anodized aluminum layers, and does not claim the gate electrode made of any material other than aluminum. In contrast, applicants' present claims 2-4 recite a silicide layer as one of the electrode layers.

Accordingly, present claims 2-4, 44-47, 61, 64, 65 and 67 are patentably distinguished over the claims of the '473 patent. Applicants respectfully request reconsideration and withdrawal of the rejection stated in the Office Action.

All claims 2-4, 44-47, 61, 64, 65 and 67 are now proper in form and patentably distinguished over all grounds of rejection stated in the Office Action. Accordingly, allowance

of all claims 2-4, 44-47, 61, 64, 65 and 67 is respectfully requested.

Should the Examiner deem that any further action by the applicants would be desirable to place this application in even better condition for issue, the Examiner is requested to telephone applicants' undersigned representatives.

Respectfully submitted,

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Date

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Attachments: 2 replacement sheets Figs. 1 and 2

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